Florida Teacher Certification Examinations

Test Information Guide

for

Elementary Education K–6

FLORIDA DEPARTMENT OF EDUCATION
www.fldoe.org

Third Edition

Developed, produced, and printed under the authority of the
Florida Department of Education

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1 Test and Test Information Guide Development

Teacher Certification Testing

Since 1980, Florida teacher certification candidates have been required to pass the Florida Teacher Certification Examination (FTCE), which has consisted of tests in reading, writing, mathematics, and professional knowledge. The 1986 Florida Legislature modified the testing program by also requiring teacher candidates to pass a test in the subject area in which they wish to be certified. In addition, the Legislature substituted the Florida College-Level Academic Skills Test (CLAST) for the reading, writing, and mathematics portions of the FTCE. The 2000 Florida Legislature replaced the CLAST with the General Knowledge Test, effective July 1, 2002.

The Elementary Education K–6 Test consists of five sections: Language Arts and Reading; Social Science; Physical Education, Health, Music, and Visual Arts; Science and Technology; and Mathematics. The Elementary Education K–6 subject area knowledge assessed on the test was identified and validated by committees of content specialists from within the state of Florida. A majority of the committee members were public school teachers, but the committees also included district supervisors and college faculty with expertise in these fields. Committee members were selected on the basis of recommendations by professional associations, experts in the field, and teachers' unions. In developing the test, the committees used an extensive literature review, interviews with selected public school teachers, a large-scale survey of teachers, pilot tests, and their own professional judgment.

Role of the Test Information Guide

The purpose of this test preparation guide is to help candidates taking the Elementary Education K–6 Test prepare effectively for the examination. The guide was designed to familiarize prospective test takers with various aspects of the examination, including the content that is covered and the way it is represented. The guide should enable candidates to direct their study and to focus on relevant material for review.

This test preparation guide is intended primarily for use by certification candidates, who may be students in a college or university teacher-preparation program, teachers with provisional certification, or persons making a career change to public school teaching. Candidates may have studied and worked in Florida or may be from out of state.

College or university faculty may also use the guide to prepare students for certification, and inservice trainers may find the guide useful for helping out-of-field and previously certified teachers prepare for recertification or multiple certification.

This test preparation guide is not intended as an all-inclusive source of subject area knowledge, nor is it a substitute for college course work in the subject area. The sample items are not an exact representation of the content of the actual test. Instead, the guide is intended to help candidates prepare for the subject area test by presenting an overview of the content and format of the examination.

2 Preparation for the Test

The following outline may help you to prepare for the examination. Adapt these suggestions to suit your own study habits and the time you have available for review.

Overview

- **Look over the organization of the test information guide.**

  Section 1 discusses the development of the test and test information guide.
  Section 2 (this section) outlines test preparation steps.
  Section 3 offers strategies for taking the test.
  Section 4 presents information about the content and structure of the test.
  Section 5 lists question formats and includes sample test questions.
  Section 6 provides an annotated bibliography of general references you may find useful in your review.
  Section 7 identifies a source of further information.

Self-Assessment

- **Decide which content areas you should review.**

  Section 4 includes the competencies and skills used to develop this subject area test and the approximate proportion of test questions from each competency area.

Review

- **Study according to your needs.**

  Review all of the competencies and concentrate on areas with which you are least familiar.

Practice

- **Acquaint yourself with the format of the examination.**

  Section 5 describes types of questions you may find on the examination.

- **Answer sample test questions.**

  Section 5 gives you an opportunity to test yourself with sample test questions and provides an answer key and information regarding the competency to which each question is linked.

Final preparation

- **Review test-taking advice.**

  Section 3 includes suggestions for improving your performance on the examination.

- **Refer to field-specific references.**

  Section 6 includes an annotated bibliography listing general references keyed to the competencies and skills used to develop this subject area test.

3 Test-Taking Advice

- Go into the examination prepared, alert, and well rested.
- Complete your travel arrangements prior to the examination date. Plan to arrive early so that you can locate the parking facilities and examination room without rushing.
- Dress comfortably and bring a sweater or jacket in case the room is too cool.
- Take the following with you to the test site:
  - — Admission ticket
  - — Several sharpened No. 2 pencils with erasers; pencils will not be supplied at the test site
  - — Proper identification as described in "Identification Policy" in the registration bulletin
  - — Blue- or black-ink ballpoint pen if you are taking an essay
  - — Watch
- There are many strategies for taking a test and different techniques for dealing with different types of questions. Nevertheless, you may find the following general suggestions useful.
  - — Read each question and all the response options carefully before marking your answer. Pay attention to all of the details.
  - — Go through the entire test once and answer all the questions you are reasonably certain about. Then go back and tackle the questions that require more thought.
  - — When you are not certain of the right answer, eliminate as many options as you can and choose the response that seems best. It is to your advantage to answer all the questions on the test, even if you are uncertain about some of your choices.
  - — After completing the examination, go back and check every question. Verify that you have answered all of the questions and that your responses are correctly entered.
  - — For paper-based tests, check periodically to be sure that you are correctly coding your answers on the answer sheet. When you answer a question out of sequence, be certain that the number of the circle you mark on your answer sheet corresponds to the proper question number in the test booklet. Be certain to mark your answers clearly on the answer sheet. If you change an answer, erase the first pencil mark completely. Also make sure there are no stray marks on the answer sheet.

4 Competencies and Skills and Test Blueprint

The table on the following pages lists the competencies and skills used as the basis for the Elementary Education K–6 examination. These competencies and skills represent the knowledge that teams of teachers, subject area specialists, and district-level educators have determined to be important for beginning teachers. This table could serve as a checklist for assessing your familiarity with each of the areas covered by the test. The competencies and skills should help you organize your review. The test blueprint indicates the approximate percentage of test questions that will cover the specific competency on the exam.

Competencies are broad areas of content knowledge.

Skills identify specific behaviors that demonstrate the competencies.

Percentages indicate the approximate proportion of test questions that represent the competencies on the test.

The following excerpt illustrates the components of the table.

Competency

Approximate percentage of total test questions (test blueprint)

Competency/Skill		**Approx. %**
Language Arts and Reading		**7**
1	**Knowledge of the reading process**	
1	Identify the processes, skills, and phases of word recognition that lead to effective decoding (e.g., pre-alphabetic, partial-alphabetic, full-alphabetic, graphophonemic, morphemic).	
2	Identify instructional methods for promoting the development of decoding and encoding skills.	
3	Identify the components of reading fluency (e.g., accuracy, automaticity, rate, prosody).	
4	Identify instructional methods (e.g., practice with high-frequency words, timed readings) for developing reading fluency.	
5	Identify instructional methods and strategies for increasing vocabulary acquisition (e.g., word analysis, choice of words, context clues, multiple exposures) across the content areas.	
6	Identify instructional methods and strategies (e.g., summarizing, self-monitoring, questioning, use of graphic and semantic organizers, think alouds, recognizing story structure) for facilitating students' reading comprehension.	
7	Identify essential comprehension skills (e.g., main idea, supporting details and facts, author's purpose, fact and opinion, point of view, inference, conclusion).	
8	Identify appropriate uses of multiple representations of information (e.g., charts, tables, graphs, pictures, print and nonprint media) for a variety of purposes.	

Skills (1-8)

Table of Competencies, Skills, and Approximate Percentages of Questions

Competency/Skill		**Approx. %**
Language Arts and Reading		
1	**Knowledge of the reading process**	**7**
1	Identify the processes, skills, and phases of word recognition that lead to effective decoding (e.g., pre-alphabetic, partial-alphabetic, full-alphabetic, graphophonemic, morphemic).	
2	Identify instructional methods for promoting the development of decoding and encoding skills.	
3	Identify the components of reading fluency (e.g., accuracy, automaticity, rate, prosody).	
4	Identify instructional methods (e.g., practice with high-frequency words, timed readings) for developing reading fluency.	
5	Identify instructional methods and strategies for increasing vocabulary acquisition (e.g., word analysis, choice of words, context clues, multiple exposures) across the content areas.	
6	Identify instructional methods and strategies (e.g., summarizing, self-monitoring, questioning, use of graphic and semantic organizers, think alouds, recognizing story structure) for facilitating students' reading comprehension.	
7	Identify essential comprehension skills (e.g., main idea, supporting details and facts, author's purpose, fact and opinion, point of view, inference, conclusion).	
8	Identify appropriate uses of multiple representations of information (e.g., charts, tables, graphs, pictures, print and nonprint media) for a variety of purposes.	
9	Identify strategies (e.g., making connections and predictions, questioning, summarizing, question generating) for developing critical-thinking skills such as analysis, synthesis, and evaluation.	
10	Identify instructional methods for teaching a variety of informational and literary text structures.	
11	Identify the content of emergent literacy (e.g., oral language development, phonological awareness, alphabet knowledge, decoding, concepts of print, motivation, text structures, written language development).	

Competency/Skill		**Approx. %**
2	**Knowledge of literature and literary analysis**	**3**
1	Identify characteristics and elements of a variety of literary genres (e.g., realistic fiction, fantasy, poetry, nonfiction).	
2	Identify terminology and appropriate use of literary devices.	
3	Identify and apply professional guidelines for selecting multicultural literature.	
4	Identify appropriate techniques for encouraging students to respond to literature in a variety of ways.	
3	**Knowledge of the writing process and applications**	**5**
1	Demonstrate knowledge of the developmental stages of writing.	
2	Demonstrate knowledge of the writing process (e.g., prewriting, drafting, revising, editing, publishing).	
3	Identify characteristics of the modes of writing (e.g., narrative, descriptive, expository, persuasive, informative, creative).	
4	Select the appropriate mode of writing for a variety of occasions, purposes, and audiences.	
5	Identify elements and appropriate use of rubrics to assess writing.	
6	Demonstrate knowledge of writing conventions (e.g., spelling, punctuation, capitalization, syntax, word usage).	
7	Identify instructional methods for teaching writing conventions.	
4	**Knowledge of reading methods and assessment**	**3**
1	Identify measurement concepts, characteristics, and uses of norm-referenced, criterion-referenced, and performance-based assessments.	
2	Identify oral and written methods for assessing student progress (e.g., informal reading inventories, fluency checks, rubrics, running records, story retelling, portfolios).	
3	Interpret assessment data (e.g., screening, progress monitoring, diagnostic) to guide instructional decisions.	
4	Use individual student reading data to differentiate instruction.	
5	Interpret students' formal and informal assessment results to inform students and parents or guardians.	
6	Evaluate the appropriateness (e.g., curriculum alignment, freedom from bias) of assessment instruments and practices.	

Competency/Skill		**Approx. %**
7	Identify appropriate classroom organizational formats (e.g., literature circles, small groups, individuals, workshops, reading centers, multiage groups) for specific instructional objectives.	
8	Identify instructional methods for developing emergent literacy.	
9	Identify methods for the diagnosis, prevention, and intervention of common emergent literacy difficulties.	
5	**Knowledge of communication**	**1**
1	Demonstrate knowledge of penmanship (e.g., legibility, proper slant, spacing).	
2	Demonstrate knowledge of listening and speaking strategies (e.g., questioning, paraphrasing, eye contact, voice, gestures).	
3	Identify instructional methods for developing listening and speaking skills.	
6	**Knowledge of information and media literacy**	**1**
1	Demonstrate knowledge of a wide array of informational and media literacy (e.g., Internet, printed material, artifacts, visual media, primary sources).	
2	Demonstrate knowledge of systematic and ethical processes for collecting and presenting authentic information.	
3	Identify current technology available for use in educational settings (e.g., computer software and hardware, Web tools).	
Social Science		
7	**Knowledge of time, continuity, and change (i.e., history)**	**5**
1	Identify historical events that are related by cause and effect.	
2	Evaluate examples of primary source documents for historical perspective.	
3	Identify cultural contributions and technological developments of Africa; the Americas; Asia, including the Middle East; and Europe.	
4	Relate physical and human geographic factors to major historical events and movements.	
5	Identify significant historical leaders and events that have influenced Eastern and Western civilizations.	
6	Identify the causes and consequences of exploration, settlement, and growth.	
7	Identify individuals and events that have influenced economic, social, and political institutions in the United States.	

Competency/Skill		**Approx. %**
8	Identify immigration and settlement patterns that have shaped the history of the United States.	
9	Identify how various cultures contributed to the unique social, cultural, economic, and political features of Florida.	
8	**Knowledge of people, places, and environment (i.e., geography)**	**5**
1	Identify the six essential elements of geography (i.e., the world in spatial terms, places and regions, physical systems, human systems, environment and society, uses of geography), including the specific terms for each element.	
2	Interpret maps and other graphic representations, and identify tools and technologies to acquire, process, and report information from a spatial perspective.	
3	Interpret statistics that show how places differ in their human and physical characteristics.	
4	Identify ways in which people adapt to an environment through the production and use of clothing, food, and shelter.	
5	Identify how tools and technological advances affect the environment.	
6	Identify physical, cultural, economic, and political reasons for the movement of people in the world, nation, or state.	
7	Identify how transportation and communication networks contribute to the level of economic development in different regions.	
8	Compare and contrast major regions of the world.	
9	**Knowledge of government and the citizen (i.e., government and civics)**	**6**
1	Identify the structure, functions, and purposes of government.	
2	Demonstrate knowledge of the rights and responsibilities of a citizen in the world, nation, state, and community.	
3	Identify major concepts of the U.S. Constitution and other historical documents.	
4	Identify how the legislative, executive, and judicial branches share powers and responsibility.	
5	Demonstrate knowledge of the U.S. electoral system and the election process.	
6	Identify the structures and functions of U.S. federal, state, and local governments.	
7	Identify the relationships between social, economic, and political rights and the historical documents that secure these rights.	

Competency/Skill	**Approx. %**
8 Demonstrate knowledge of the processes of the U.S. legal system. 9 Identify the roles of the United States in international relations.	
10 Knowledge of production, distribution, and consumption (i.e., economics)	**3**
1 Identify ways that limited resources affect the choices made by governments and individuals. 2 Compare and contrast the characteristics of different economic institutions (e.g., banks, credit unions, stock markets, the Federal Reserve). 3 Identify the role of markets from production through distribution to consumption. 4 Identify factors to consider when making consumer decisions. 5 Identify the economic interdependence between nations (e.g., trade, finance, movement of labor). 6 Identify human, natural, and capital resources and how these resources are used in the production of goods and services.	
11 Knowledge of instruction and assessment of the social sciences	**1**
1 Identify appropriate resources for teaching social science concepts. 2 Identify appropriate assessment methods in teaching social science concepts.	
Music, Visual Arts, Physical Education, and Health **12 Knowledge of skills and techniques in music and visual arts**	**3**
1 Identify appropriate varieties of music (e.g., age-appropriate range and vocal ability; diverse cultures, genres, and styles). 2 Identify developmentally appropriate singing techniques (e.g., posture, breath support, tone quality, vocal range). 3 Identify correct performance techniques for rhythmic and melodic classroom instruments (e.g., nonpitched percussion, recorder, autoharp, keyboard). 4 Read and interpret simple, traditional, and nontraditional music notation (e.g., melodic, rhythmic, harmonic). 5 Select safe and developmentally appropriate media, techniques, and tools to create both two-dimensional and three-dimensional works of art. 6 Identify appropriate uses of art materials and tools for developing basic processes and motor skills.	

Competency/Skill		**Approx. %**
13	**Knowledge of creation and communication in music and visual arts**	**3**
1	Identify the elements of music (e.g., rhythm, melody, form, texture, timbre, dynamics) and ways they are used to express text, ideas, emotions, settings, time, and place.	
2	Demonstrate knowledge of strategies for developing creative responses through music to ideas drawn from text, speech, movement, and visual images.	
3	Demonstrate knowledge of strategies for developing creative responses through art to ideas drawn from text, music, speech, movement, and visual images.	
4	Identify the elements of art and principles of design (e.g., line, color, shape, form, texture, balance, movement) and ways they are used to express text, ideas, meanings, and emotions.	
14	**Knowledge of cultural and historical connections in music and visual arts**	**2**
1	Identify characteristics of style in musical selections.	
2	Demonstrate knowledge of how music reflects particular cultures, historical periods, and places.	
3	Identify characteristics of style in works of art.	
4	Demonstrate knowledge of how visual arts reflect particular cultures, historical periods, and places.	
15	**Knowledge of aesthetic and critical analysis of music and visual arts**	**1**
1	Identify strategies for developing students' analytical skills to evaluate musical performance.	
2	Identify strategies for developing students' analytical skills to evaluate works of art.	
16	**Knowledge of appropriate assessment strategies in music and visual arts**	**1**
1	Identify a variety of developmentally appropriate strategies and materials for assessing skills, techniques, creativity, and communication in music.	
2	Identify a variety of developmentally appropriate strategies and materials for assessing skills, techniques, creativity, and communication in visual arts.	

Competency/Skill		**Approx. %**
17	**Knowledge of personal health and wellness**	**4**
1	Demonstrate knowledge of the interrelatedness of physical activity, fitness, and health.	
2	Demonstrate basic knowledge of nutrition and its role in promoting health.	
3	Identify the processes of decision making and goal setting in promoting individual health and wellness.	
4	Demonstrate knowledge of common health problems and risk behaviors associated with them.	
18	**Knowledge of physical, social, and emotional growth and development**	**3**
1	Identify the principles of sequential progression of motor skill development.	
2	Demonstrate knowledge of human growth and development and its relationship to physical, social, and emotional well-being.	
3	Identify major factors associated with social and emotional health (e.g., communication skills, self-concept, fair play, conflict resolution, character development, stress management).	
4	Identify problems associated with physical, social, and emotional health.	
5	Identify factors related to responsible sexual behavior.	
19	**Knowledge of community health and safety issues**	**2**
1	Identify factors contributing to substance use and abuse and identify signs, symptoms, effects, and strategies for the prevention of substance abuse.	
2	Demonstrate knowledge of resources from home, school, and community that provide valid health information, products, and services.	
3	Identify appropriate violence prevention strategies in the home, school, and community.	
4	Identify appropriate injury prevention and safety strategies in the home, school, and community.	

Competency/Skill	**Approx. %**
20 Knowledge of subject content and appropriate curriculum design	**1**
1 Distinguish between developmentally appropriate and inappropriate instructional practices that consider the interaction of cognitive, affective, and psychomotor domains. 2 Identify various factors (e.g., environment, equipment, facilities, space, safety, group diversity) to consider when planning physical activities. 3 Analyze the influence of culture, media, technology, and other factors when planning health and wellness instruction.	
Science and Technology **21 Knowledge of the nature of matter**	**2**
1 Identify the fundamental physical properties of matter (e.g., mass, volume). 2 Compare physical and chemical changes (e.g., cutting, burning, rusting). 3 Compare the characteristics of elements, compounds, and mixtures. 4 Compare the physical properties of solids, liquids, and gases (e.g., mass, volume, color, texture, hardness, temperature). 5 Compare the properties of liquids during phase change through heating and cooling (e.g., boiling, melting, freezing, evaporation, condensation). 6 Demonstrate knowledge that all matter is composed of parts too small to be seen (e.g., electrons, protons, neutrons).	
22 Knowledge of forces, motion, and energy	**4**
1 Demonstrate knowledge of temperature, heat, and heat transfer. 2 Identify the types and characteristics of contact forces (e.g., pushes and pulls, friction) and at-a-distance forces (e.g., magnetic, gravitational, electrostatic). 3 Apply knowledge of light and optics to practical applications (i.e., reflection, refraction, diffusion). 4 Apply knowledge of electrical currents, circuits, conductors, insulators, and static electricity to real-world situations. 5 Distinguish between different types of energy (e.g., chemical, electrical, mechanical, electromagnetic, heat, light, sound, solar) and their characteristics as they apply to real-world situations. 6 Apply knowledge of the ability of energy to cause motion or create change.	

Competency/Skill		**Approx. %**
7	Demonstrate knowledge that electrical energy can be transformed into heat, light, mechanical, and sound energy.	
8	Demonstrate knowledge of potential and kinetic energy.	
9	Demonstrate knowledge that motion of all matter can be changed by forces, observed, described, and measured.	
10	Differentiate between balanced and unbalanced forces and how they affect objects.	
23	**Knowledge of Earth and space**	**4**
1	Identify characteristics of geologic formations (e.g., volcanoes, canyons, mountains) and the mechanisms by which they are changed (e.g., physical and chemical weathering, erosion, plate tectonics).	
2	Identify the characteristics of soil and the process of soil formation.	
3	Identify the major groups and properties of rocks and minerals, examples of each, and the processes of their formation.	
4	Identify ways in which land, air, and water interact (e.g., soil absorption, runoff, water cycle, atmospheric conditions, weather patterns).	
5	Differentiate between radiation, conduction, and convection, the three mechanisms by which heat is transferred through Earth's system.	
6	Identify the components of Earth's solar system and compare their individual characteristics.	
7	Demonstrate knowledge of Earth's place in our changing universe (e.g., history and purposes of space exploration, vastness of space).	
8	Demonstrate knowledge of the phases of the Moon and the Moon's effect on Earth.	
9	Identify Earth's tilt and orbital pattern and how they determine the seasons.	
10	Analyze various conservation methods and their effectiveness in relation to renewable and nonrenewable natural resources.	
11	Identify the sun as a star and its effect on Earth (e.g., radiant energy, heat, light).	
24	**Knowledge of life science**	**4**
1	Compare and contrast living and nonliving things.	
2	Distinguish between infectious agents (e.g., viruses, bacteria, fungi, parasites) and their effects on the human body.	
3	Differentiate structures and functions of plant and animal cells.	

Competency/Skill		**Approx. %**
4	Identify the major steps of plants' physiological processes of photosynthesis, transpiration, reproduction, and respiration.	
5	Demonstrate knowledge of how plants respond to stimuli (e.g., heat, light, gravity).	
6	Identify the structures and functions of organs and systems of both animals and humans.	
7	Demonstrate knowledge of animals' physiological processes (e.g., respiration, reproduction, digestion, circulation).	
8	Demonstrate knowledge of cell theory as the fundamental organizing principle of life on Earth.	
9	Demonstrate knowledge of heredity, evolution, and natural selection.	
10	Demonstrate knowledge of the interdependence of living things with each other and with their environment (e.g., food webs, pollution, hurricanes).	
25	**Knowledge of the nature of science**	**4**
1	Demonstrate knowledge of basic science processes (e.g., observing, classifying, communicating, qualifying, inferring, predicting).	
2	Apply knowledge of scientific inquiry (e.g., forming hypotheses, manipulating variables, recording and interpreting data) to learning science concepts.	
3	Identify the appropriate laboratory equipment for specific activities.	
4	Identify state safety procedures for teaching science, including the care of living organisms and the accepted procedures for the safe preparation, use, storage, and disposal of chemicals and other materials.	
5	Demonstrate knowledge of basic scientific vocabulary (e.g., theory, law, hypotheses, models).	
26	**Knowledge of the relationship of science and technology**	**1**
1	Identify the interrelationship of science and technology.	
2	Identify the tools and techniques of science and technology used for data collection and problem solving.	
3	Identify ways in which technology can be used by students to represent understanding of science concepts.	

Competency/Skill	**Approx. %**
27 Knowledge of instruction and assessment	**1**
1 Identify a variety of appropriate instructional strategies (e.g., cooperative learning, inquiry learning, investigations) for teaching specific topics. 2 Select manipulatives, physical models, and other classroom teaching tools for teaching specific topics. 3 Identify a variety of methods for assessing scientific knowledge, including analyzing student thinking processes to determine strengths and weaknesses.	
Mathematics	
28 Knowledge of numbers and operations	**8**
1 Associate multiple representations of numbers using word names, standard numerals, and pictorial models for real numbers (e.g., whole numbers, decimals, fractions, integers). 2 Compare the relative size of integers, fractions, decimals, numbers expressed as percents, and numbers with exponents. 3 Apply ratios, proportions, and percents in real-world situations. 4 Represent numbers in a variety of equivalent forms, including whole numbers, integers, fractions, decimals, percents, and exponents. 5 Perform operations on rational numbers (e.g., whole numbers, fractions, decimals, integers) using multiple representations and algorithms and understand the relationships between these operations (i.e., addition, subtraction, multiplication, and division). 6 Select the appropriate operation(s) to solve problems involving ratios and percents and the addition, subtraction, multiplication, and division of rational numbers. 7 Use estimation in problem-solving situations. 8 Apply number theory concepts (e.g., primes, composites, multiples, factors, number sequences, number properties, rules of divisibility). 9 Apply the order of operations.	
29 Knowledge of geometry and measurement	**6**
1 Analyze properties of two-dimensional shapes (e.g., area, sides, angles). 2 Apply geometric properties and relationships to solve problems (e.g., circumference, perimeter, area, volume) using appropriate strategies and formulas.	

Competency/Skill		**Approx. %**
3	Apply the geometric concepts of symmetry, congruency, similarity, and transformations.	
4	Identify and locate ordered pairs in a rectangular coordinate system.	
5	Analyze properties of three-dimensional shapes (e.g., volume, faces, edges, vertices).	
6	Compose and decompose two-dimensional and three-dimensional geometric shapes.	
7	Determine how a change in length, width, height, or radius affects perimeter, circumference, area, surface area, or volume.	
8	Within a given system (i.e., metric or customary), solve real-world problems involving measurement with both direct and indirect measures and make conversions to a larger or smaller unit.	
9	Solve real-world problems involving estimates and exact measurements.	
10	Select appropriate measurement units to solve problems.	
11	Identify three-dimensional objects from two-dimensional representations of objects and vice versa.	
30	**Knowledge of algebra**	**3**
1	Extend and generalize patterns or functional relationships.	
2	Interpret, compare, and translate multiple representations of patterns and relationships by using tables, graphs, equations, expressions, and verbal descriptions.	
3	Select a representation of an algebraic expression, equation, or inequality that applies to a real-world situation.	
4	Demonstrate knowledge of one- and two-step linear equations and inequalities.	
5	Apply the commutative, associative, and distributive properties to show that two expressions are equivalent.	
31	**Knowledge of data analysis**	**2**
1	Demonstrate knowledge of the concepts of variability (i.e., range) and central tendency (i.e., mean, median, mode).	
2	Use data to construct and analyze frequency tables and graphs (e.g., bar graphs, pictographs, line graphs).	
3	Make accurate predictions and draw conclusions from data.	

Competency/Skill	**Approx. %**
32 Knowledge of instruction and assessment	**1**
1 Identify a variety of appropriate instructional strategies (e.g., cooperative learning, peer tutoring, think alouds) for teaching specific concepts. 2 Identify ways that manipulatives, mathematical and physical models, and technology can be used in instruction. 3 Identify a variety of methods for assessing mathematical knowledge, including analyzing student thinking processes to determine strengths and weaknesses.	

5 Test Format and Sample Questions

The Elementary Education K–6 Test consists of five sections: Language Arts and Reading; Social Science; Physical Education, Health, Music and Visual Arts; Mathematics; and Science and Technology.

You will receive separate test booklets for the morning and afternoon sections and an answer sheet on which to record your responses. Each question will contain four response options, and you will record your selection by marking **A**, **B**, **C**, or **D**.

The table below presents types of questions on the examination and refers you to a sample question of each type.

Type of Question	Sample Question
Direct question Choose the response option that best answers the question.	Question 2, page 25
Scenario Examine a situation, problem, or case study. Then answer a question, make a diagnosis, or recommend a course of action by selecting the best response option.	Question 4, page 25
Sentence completion Select the response option that best completes the sentence.	Question 12, page 27
Command Select the best response option.	Question 17, page 28
Graphics Choose the option that best answers a question involving a number line, a geometric figure, graphs of lines or curves, a table, or a chart.	Question 27, page 30
Word Problem Apply mathematical principles to solve a real-world problem.	Question 28, page 30
Charts, graphs, and maps Identify or interpret a diagram by choosing the response option that best answers the question.	Question 29, page 31

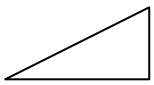
Sample Questions

The following questions represent both the form and content of questions on the examination. These questions will acquaint you with the general format of the examination; however, these sample questions do not cover all of the competencies and skills that are tested and will only approximate the degree of examination difficulty.

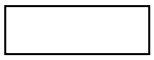
An answer key follows at the end of the sample questions. The answer key includes information regarding the competency to which each question is linked.

K–6 Mathematics Reference Sheet

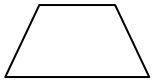
Area



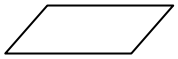
Triangle $A = \frac{1}{2}bh$



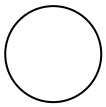
Rectangle $A = lw$



Trapezoid $A = \frac{1}{2}h(b_1 + b_2)$



Parallelogram $A = bh$



Circle $A = \pi r^2$

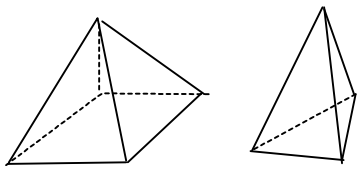
KEY	
b = base	d = diameter
h = height	r = radius
l = length	A = area
w = width	C = circumference
$S.A.$ = surface area	V = volume
	B = area of base
Use 3.14 or $\frac{22}{7}$ for π	

Circumference

$C = \pi d = 2\pi r$

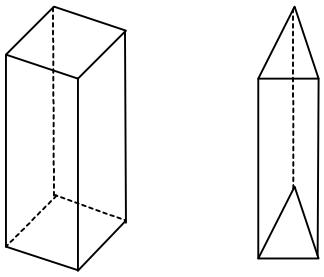
Surface Area

1. Surface area of a prism or pyramid equals the sum of the areas of all faces.



Volume

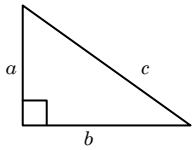
1. Volume of a triangular or rectangular prism equals the <u>Area of the Base</u> (B) times the height (h).
   $V = Bh$



2. Volume of a pyramid equals $\frac{1}{3}$ times the <u>Area of the Base</u> (B) times the height (h).

$$V = \frac{1}{3}Bh$$

Pythagorean theorem: $a^2 + b^2 = c^2$



Conversions

1 yard = 3 feet = 36 inches
1 mile = 1,760 yards = 5,280 feet
1 acre = 43,560 square feet
1 hour = 60 minutes
1 minute = 60 seconds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 pound = 16 ounces
1 ton = 2,000 pounds

1 liter = 1000 milliliters = 1000 cubic centimeters
1 meter = 100 centimeters = 1000 millimeters
1 kilometer = 1000 meters
1 gram = 1000 milligrams
1 kilogram = 1000 grams

Metric numbers with four digits are presented without a comma (e.g., 9960 kilometers). For metric numbers greater than four digits, a space is used instead of a comma (e.g., 12 500 liters).

DIRECTIONS: Read each question and select the best response.

1. The most effective way to develop students' reading fluency is through
   A. repeated reading.
   B. choral reading.
   C. round-robin reading.
   D. readers theatre.

2. Which literary device is being used when inanimate objects or abstract concepts are seemingly endowed with human characteristics?
   A. imagery
   B. paradox
   C. personification
   D. metonymy

3. Which of the following modes of writing is intended to provide information and includes facts and data?
   A. descriptive
   B. narrative
   C. expository
   D. persuasive

4. A 3rd-grade teacher asks the students to partner-read a literary selection. The teacher walks around the room and stops to question each pair of students about the story. Which type of assessment is the teacher using?
   A. informal
   B. formal
   C. diagnostic
   D. standardized

5. A 4th-grade teacher is assigning an oral report. The teacher should begin the activity by
   A. choosing a topic.
   B. setting a purpose.
   C. reviewing skills.
   D. creating an outline.

6. Students need a collection of maps to complete an assignment. The best resource for students to use would be a(an)
   A. dictionary.
   B. periodical.
   C. atlas.
   D. encyclopedia.

7. The Sons of Liberty organized a demonstration primarily in response to the
   A. Quartering Act.
   B. Stamp Act.
   C. Townshend Act.
   D. Tea Act.

8. Which of the following structures would most likely be used by a nomadic society?
   A. animal-skin tent
   B. straw-thatched hut with pole walls
   C. sun-dried brick shelter
   D. wood-and-mud chinked dwelling

9. Which of the following U.S. documents states that the purposes of government include establishing justice and securing the blessings of liberty?
   A. the Articles of Confederation
   B. the Constitution of the United States
   C. the Declaration of Independence
   D. the Bill of Rights

10. The Latin phrase *caveat emptor* encourages consumers to
    A. use comparison shopping to get the best prices.
    B. avoid using credit to buy products.
    C. refuse to buy items on impulse or hunches.
    D. examine products carefully before purchasing.

11. To assess a student's ability to analyze the draining of the Everglades and the development of South Florida, it would be most effective to ask the student to
    A. participate in a play about the state's agriculture.
    B. prepare a report on early exploration in the area.
    C. label a blank political map of the state.
    D. write a cause-and-effect essay about the region.

12. When developing appropriate singing techniques in elementary students, teachers should encourage students to
    A. sing at a fortissimo level.
    B. perform diverse styles of music.
    C. sit up straight and breathe properly.
    D. use a speech drone voice.

13. To create a sense of excitement and urgency within a given portion of a musical work, a composer typically would make which of the following changes?
    A. introducing a minor key
    B. reducing the volume
    C. increasing the tempo
    D. changing the key signature

14. The use of carved and painted wooden masks in religious rituals is most commonly associated with which of the following cultures?
    A. Northern European
    B. Asian
    C. Middle Eastern
    D. African

15. A 5th-grade class is viewing and discussing Andy Warhol's *Campbell's Soup Can.* What is the first thing that attracts the students to the painting?
    A. the canvas of the painting
    B. the subject matter and colors
    C. the artist's signature
    D. the classroom setting

16. Which of the following tools would be the most appropriate to use for evaluating a student's progress in a studio art class?
    A. self-reflective essay
    B. portfolio
    C. multiple-choice test
    D. journal

17. A student is experiencing difficulty throwing a ball accurately. Identify the domain in which the student needs practice.
    A. motor
    B. cognitive
    C. affective
    D. physical

18. When riding a bicycle in city traffic, the biker should ride
    A. the opposite direction as the traffic.
    B. off the roadway.
    C. on the sidewalk.
    D. the same direction as the traffic.

19. To counteract the negative effects of modern media and technology options on children, a health and wellness unit should include
    A. interactive computer games.
    B. ways to incorporate more physical activity into daily life.
    C. suggestions for nutritious snacks.
    D. addresses for Web sites that include reliable information.

20. Which of the following is an example of a mixture?
    A. sand
    B. nitrogen
    C. sugar
    D. water

21. A strawberry appears to be red because the color red is
    A. absorbed by the skin of the strawberry.
    B. reflected by the skin of the strawberry.
    C. transcribed by the skin of the strawberry.
    D. transferred by the skin of the strawberry.

22. Which of the following is the most important rationale for the scientific study of Mars?
    A. investigating the existence of intelligent life forms
    B. understanding the evolution of the solar system
    C. gaining access to valuable minerals
    D. establishing a human colony

23. Which of the following structures is present in plant cells but not in animal cells?
    A. chloroplast
    B. mitochondrion
    C. cytoplasm
    D. nucleus

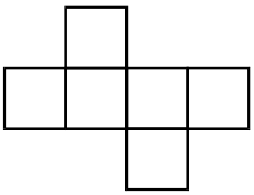
24. When examining the color and clarity of 20 milliliters of a liquid, which of the following would be the most appropriate substitute for a test tube?
    A. beaker
    B. eyedropper
    C. graduated cylinder
    D. drinking glass

25. Which scientific device would be most appropriate to use to map the ocean floor?
    A. sonar
    B. ground penetrating radar
    C. seismometer
    D. microwave generator

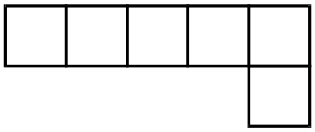
26. According to the definition of multiplication, if $ab = c$ and a, b, and c are all greater than 0, then
    A. $\frac{bc}{a} = 1$
    B. $a = \frac{b}{c}$
    C. $b = \frac{a}{c}$
    D. $b = \frac{c}{a}$

27. Which of the following two-dimensional representations can be folded to make a cube?

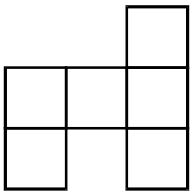
A.



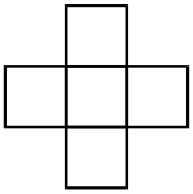
B.



C.



D.

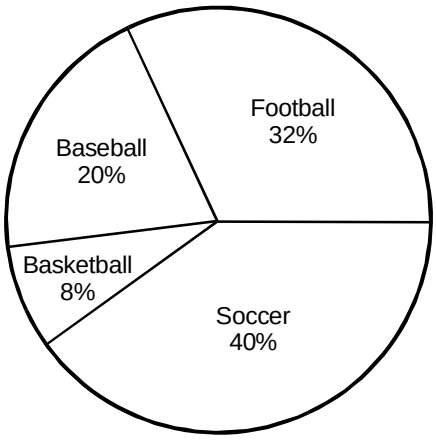


28. On the first day of school, a group of students collected 2 soda cans. On the second day the students collected 4 soda cans, and on the third day they collected 8, and on the fourth day they collected 16. Each day they collected twice the number collected on the previous day. How many soda cans will they collect on the ninth day?

A. 18
B. 256
C. 512
D. 1024

29. The following circle graph shows the results of a survey of 150 students. How many students chose baseball as their favorite sport?

Favorite Sport



A. 15
B. 20
C. 30
D. 40

30. Which of the following models would be most appropriate to use when introducing functions?
A. fraction bars
B. geometric solids
C. input/output diagrams
D. line graphs

Answer Key

Question Number	Correct Response	Competency
1.	A	1
2.	C	2
3.	C	3
4.	A	4
5.	B	5
6.	C	6
7.	D	7
8.	A	8
9.	B	9
10.	D	10
11.	D	11
12.	C	12
13.	C	13
14.	D	14
15.	B	15
16.	B	16
17.	A	18
18.	D	19
19.	B	20
20.	A	21
21.	B	22
22.	B	23
23.	A	24
24.	C	25
25.	A	26
26.	D	28
27.	A	29
28.	C	30
29.	C	31
30.	C	32

6 Annotated Bibliography

The annotated bibliography that follows includes basic references that you may find useful in preparing for the exam. Each resource is keyed to the competencies and skills found in Section 4 of this guide.

This bibliography is representative of the most important and most comprehensive texts as reflected in the competencies and skills. The Florida Department of Education does not endorse these references as the only appropriate sources for review; many comparable texts currently used in teacher preparation programs also cover the competencies and skills that are tested on the exam.

1. Adams, M. J., Foorman, B. R., Lundgberg, I., & Beeler, T. (1998). *Phonemic awareness in young children: A classroom curriculum*. Baltimore: Brookes Publishing.

Includes age-appropriate activities to develop phonemic awareness. Meets federal requirements for scientifically based reading research and includes a flexible assessment test that allows for group screening. Useful for review of competencies 1 and 4.

2. Anderson, W. M., & Lawrence, J. E. (2007). *Integrating music into the elementary classroom* (7th ed.). Belmont, CA: Thomson Schirmer.

Provides methods and materials appropriate for teaching music to elementary students. Useful for review of competencies 12–16.

3. Armbruster, B. B., Lehr, F., & Osborne, J. (2008). *Put reading first: The research building blocks for teaching children to read* (3rd ed.). Retrieved December 6, 2008, from http://www.nifl.gov/partnershipforreading/publications/cierra.pdf

Summarizes research on how to successfully teach children to read. Provides analysis and discussion in five areas of reading instruction: phonemic awareness, phonics, fluency, vocabulary, and text comprehension. Useful for review of competencies 1–3, 5, and 6.

4. Axelrod, A. (2003). *American history — A.S.A.P.: As simple as possible*. New York: Prentice Hall.

Provides a quick review of U.S. history. Includes 200 events in American history from the time of the early Native Americans to the present. Useful for review of competency 7.

5. Brinkley, A. (2005). *American history: A survey* (12th ed.). New York: McGraw-Hill.

Explores various areas of history (social, cultural, urban, racial, ethnic); the history of the West and South; environmental history; the history of women and gender issues; and U.S. history in a global context. Useful for review of competency 7.

6. Caldwell, J. S. (2008). *Reading assessment: A primer for teachers and coaches* (2nd ed.). New York: Guilford Press.

Provides information and tools for reading assessment. Presents research-based strategies for recognizing good reader behaviors, assessing students' strengths and weaknesses, analyzing evidence collected, and making instructional decisions. Considers advantages and disadvantages of high-stakes testing and presents alternatives to standardized assessments. Useful for review of competency 4.

7. Chapin, J. R. (2009). *Elementary social studies: A practical guide* (7th ed.). Boston: Pearson Allyn & Bacon.

Presents the essential methods for teaching and assessing social studies content in the K–8 classroom. Useful for review of competency 11.

8. Charlesworth, R., & Lind, K. M. (2007). *Math and science for young children* (5th ed.). Clifton Park, NJ: Delmar Cengage Learning.

Focuses on the integration of math and science with other important areas of child development from birth through age 8. Addresses the national standards of the National Association for the Education of Young Children, National Council of Teachers of Mathematics, National Science Teachers Association, American Association for the Advancement of Science, and National Research Council. Useful for review of competencies 27 and 32.

9. Cunningham, P. M., & Allington, R. L. (2006). *Classrooms that work: They can all read and write* (4th ed.). Boston: Pearson Allyn & Bacon.

Emphasizes integration of phonics and literature-based process writing and reading instruction to enhance learning and reading skills. Clarifies concepts and defines key terms. Provides information on how to engage all children in meaning-centered reading by fostering powerful decoding and comprehension strategies and implementing a balanced reading program. Identifies and explores five components: real reading and writing, guided reading, guided writing, decoding/spelling, and word/word knowledge. Useful for review of competencies 1–6.

10. Duplass, J. A. (2008). *Teaching elementary social studies* (2nd ed.). Boston: Houghton Mifflin.

Includes active-learning strategies, application of constructivist principles, a focus on big ideas and thinking skills, use of the Internet, and modeling of best practices and performance-based assessments. Useful for review of competency 11.

11. Edwards, G. C., III, Wattenberg, M. P., & Lineberry, R. L. (2002). *Government in America: People, politics and policy* (10th ed.). New York: Harper Collins.

Emphasizes policy to illustrate the direct impact of government on people's daily lives. Useful for review of competency 9.

12. Fellman, J. D., Getis, A., & Getis, J. (2007). *Geography: Landscapes of human activities* (9th ed.). Boston: McGraw-Hill Higher Education.

Introduces human geography and its relevance to daily life. Conveys the breadth of human geography and provides insight into the nature and intellectual challenges of the field of geography. Gives special attention to gender issues. Useful for review of competency 8.

13. Friedman, D. P., Stine, C. C., & Whalen, S. (2004). *Lifetime health*. Orlando, FL: Holt, Rinehart and Winston.

Provides information about health and wellness. Includes fundamentals of health such as self-esteem, and discusses the dangers of drugs, alcohol, and tobacco, with an emphasis on responsible decision making. Features 10 life skills to give students the tools to make wise health decisions. Useful for review of competencies 17–19.

14. Fry, E. B., & Kress, J. E. (2006). *The reading teacher's book of lists* (5th ed.). San Francisco: Jossey-Bass.

Includes nearly 200 lists for developing instructional materials and planning lessons addressing reading and literacy. Useful for review of competencies 1–6.

15. Gannon, M. (2003). *Florida: A short history* (Rev. ed.). Gainesville, FL: University Press of Florida.

Basic review of Florida history. Useful for review of competency 7.

16. Hall, S. L. (2006). *I've DIBEL'd, now what?* Frederick, CO: Sopris West.

Includes progress monitoring ideas to implement in the classroom after administering the DIBELS screener. Useful for review of competency 4.

17. Harvey, S., & Goudvis, A. (2007). *Strategies that work: Teaching comprehension for understanding and engagement* (2nd ed.). Portland, ME: Stenhouse Publishers.

Emphasizes explicit teaching of thinking strategies to allow students to become engaged, thoughtful, independent readers. Includes comprehension lessons to explore the central role that activating background knowledge plays in understanding. A section on content literacy describes how to apply comprehension strategies flexibly across the curriculum. Useful for review of competencies 1–6.

18. Hopple, C. J. (2005). *Elementary physical education teaching and assessment: A practical guide* (2nd ed.). Champaign, IL: Human Kinetics.

Designed to make the physical education assessment process easier and more manageable. Offers help in planning and implementing the school- or district-wide curriculum. Useful for review of competencies 17–20.

19. Knox, P. L., & Marston, S. A. (2007). *Places and regions in global context: Human geography* (4th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Explores issues from a geographic perspective, reflecting developing trends such as the globalization of industry, the increase in ethnic regionalism accompanying decolonization and new state formation, and the trend toward transnational political and economic organizations. Covers key issues of human geography such as global security, trade in commodities, cultural dimensions of globalization, youth culture, economic aid and outsourcing, and bioterrorism. Contains numerous maps to illustrate spatial elements inherent to human geography. Useful for review of competency 8.

20. Kwan, T., & Texley, J. (2003). *Exploring safely: A guide for elementary teachers*. Arlington, VA: NSTA Press.

Addresses safety issues encountered in teaching science in elementary school. Emphasizes positive options for heading off potential hazards, from handling special equipment to conducting field studies. Chapters cover teaching safe work habits; equipping classrooms for safety and convenience, including organizational systems for preparation, setup, and cleanup; choosing and culturing live plants and animals; and working safely with electricity, chemicals, and volunteers. Includes model forms, including permission slips and student contracts. Useful for review of competency 27.

21. Lappan, G., Fey, J. T., Fitzgerald, W. M., Friel, S. N., & Phillips, E. D. (2002). *Connected mathematics.* Glenview, IL: Pearson Prentice Hall.

Includes problem-solving lessons and ancillary materials to assist in the development of mathematics and reading skills. Useful for review of competencies 28–31.

22. Long, C. T., DeTemple, D. W., & Millman, R. (2009). *Mathematical reasoning for elementary teachers* (5th ed.). Boston: Pearson Addison-Wesley.

Focuses on mathematical knowledge needed for teaching. Emphasizes the teacher's ability to explain, intervene, and respond to students' problems at an appropriate conceptual level. Useful for review of competencies 28–32.

23. Maletsky, E. M., & Andrews, A. G. (2006). *Harcourt math*. Orlando, FL: Harcourt.

Comprehensive mathematics program for students in kindergarten through 5th grade. Aligned with National Council of Teachers of Mathematics standards. Emphasizes understanding key mathematical ideas and applying them to daily life. Balances understanding of concepts, proficiency with skills, ability to reason and solve problems, and knowledge of mathematical language. Useful for review of competencies 28–32.

24. McKnight, T. L., & Hess, D. (2007). *Physical geography: A landscape appreciation* (9th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Fosters an understanding of Earth and its physical geography. Includes coverage of global environmental change and human alteration of the atmosphere, including ozone depletion and air pollution. Useful for review of competency 8.

25. Miller, R. L. (2007). *Economics today and tomorrow*. New York: Glencoe McGraw-Hill.

Includes coverage of the economy and the impact of the digital revolution, as well as statistics and news events. Contains updated diagrams, charts, maps, and illustrations. Useful for review of competency 10.

26. Musser, G. L., Burger, W. F., & Peterson, B. E. (2006). *Mathematics for elementary teachers: A contemporary approach* (7th ed.). Hoboken, NJ: Wiley.

Features problem-solving strategies, relevant topics, and opportunities for hands-on experience. Moves from concrete to pictorial to abstract, reflecting the typical sequence of math instruction in elementary classrooms. Useful for review of competencies 28–32.

27. National Association for Sport and Physical Education. (1995). *Looking at physical education from a developmental perspective*. Retrieved June 4, 2008, from www.aahperd.org/naspe/pdf_files/pos_papers/Developmental_Perspective.pdf

Position paper of the National Association for Sport and Physical Education. Focuses on developmentally appropriate physical education practices for children in elementary school. Useful for review of competencies 17–20.

28. National Geographic Society. (1994). *U.S. national geography standards*. Retrieved May 15, 2008, from http://www.nationalgeographic.com/xpeditions/standards/

Intended to help teachers decide what to teach, at what grades to teach it, and what to expect of students as a result. Provides rigorous but realistic benchmarks for geography education. Useful for review of competency 8.

29. Osborn, J., Lehr, F., & Hiebert, E. H. (2003). *A focus on fluency*. Honolulu, HI: Pacific Resources for Education and Learning.

Summarizes research on fluency and fluency instruction and describes strategies for instruction. Includes various ways of conducting repeated oral reading and using independent silent reading. Presents an integrated fluency instruction approach and discusses the role of texts and fluency assessment. Useful for review of competency 1.

30. Peters, J. M., & Stout, D. L. (2006). *Methods for teaching elementary school science* (5th ed.). Boston: Pearson Allyn & Bacon.

Presents a constructivist approach to the methodology of effective elementary science teaching. Topics include how science concepts and skills are effectively taught and learned, ways to successfully plan science instruction, resources needed to enhance the science program, assessment of student inquiry, and integration of instructional and design technology. Useful for review of competencies 26 and 27.

31. Reys, R. E., Lindquist, M. M., Lambdin, D., & Smith, N. L. (2007). *Helping children learn mathematics* (8th ed.). New York: Wiley.

Focuses on methods of teaching mathematics to elementary children using a variety of techniques including manipulatives and technology. Covers computational alternatives, such as mental computation, estimation, written techniques, and calculator use. Emphasizes problem solving, demonstrates effective classroom practices while providing a look into a variety of mathematical lessons at different grade levels, and cites and discusses specific books that can be used to complement and supplement mathematics learning. Useful for review of competency 32.

32. Rozmajzl, M., & Boyer-Alexander, R. (2006). *Music fundamentals, methods, and materials for the elementary classroom teacher* (4th ed.). Boston: Pearson Allyn & Bacon.

Presents music fundamentals for teaching elementary children within the context of pedagogical techniques. Useful for review of competencies 12–16.

33. Rubenstein, J. M. (2005). *An introduction to human geography: The cultural landscape* (8th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Introduces geography as a social science by emphasizing the relevance of geographic concepts to human problems. Explores the relationship between globalization and cultural diversity. Useful for review of competency 8.

34. Sallee, T., Kysh, J., Kasimatis, E., & Hoey, B. (2002). *College preparatory mathematics* (2nd ed.). Sacramento, CA: CPM Educational Program.

A series of mathematics textbooks that integrate basic skills with conceptual understanding and problem-solving strategies. Useful for review of competencies 28–31.

35. Spodek, H. (2005). *The world's history* (3rd ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Links chronology and geography in eight units, each emphasizing a single theme—origins, cities, empires, religion, trade, migrations, revolutions, and technology. Using primary sources as well as data and interpretation, addresses how historians form, debate, and revise historical understanding of the world; shows the value of other disciplines in understanding history; and helps students begin to assess their own place in history. Useful for review of competency 7.

36. Strouf, J. L. (2005). *The literature teacher's book of lists* (2nd ed.). San Francisco: Jossey-Bass.

Includes lists for developing instructional materials and planning lessons on literature. Lists supply teacher background and reproducibles for student use. Useful for review of competency 2.

37. Sunal, C. S., & Haas, M. E. (2008). *Social studies for the elementary and middle grades: A constructivist approach* (3rd ed.). Upper Saddle River, NJ: Pearson Education, Inc.

A constructivist approach to elementary and middle school social studies education. Provides pedagogical content knowledge within a guided inquiry framework. Includes suggestions for activities and assessement strategies. Useful for review of competencies 9–11.

38. Tierney, R. J., & Readence, J. E. (2005). *Reading strategies and practices: A compendium* (6th ed.). Boston: Pearson Allyn & Bacon.

Provides information on instructional procedures for teachers, prospective teachers, and literacy education professionals. Intended as an ongoing reference for use with literacy education courses. Allows the reader to examine and evaluate instructional techniques. Useful for review of competencies 1–6.

39. Tompkins, G. E. (2006). *Literacy for the 21st century: A balanced approach* (4th ed.). Upper Saddle River, NJ: Pearson Education, Inc.

A balanced approach to literacy methods that models effective teaching to create an environment that engages and addresses the needs of all students. Useful for review of competencies 1–6.

40. Tyner, B. (2003). *Small group reading instruction: A differentiated teaching model for beginning and struggling readers.* Newark, DE: International Reading Association.

Presents an explicit model for guided reading instruction and word study in small groups. Useful for review of competencies 1–6.

41. Van de Walle, J. M. (2007). *Elementary and middle school mathematics: Teaching developmentally* (6th ed.). Boston: Pearson Allyn & Bacon.

Provides ideas and discussion to develop understanding of mathematics. Reflects National Council of Teachers of Mathematics standards. Explores the benefits of constructivist, or student-centered mathematics instruction. Useful for review of competency 32.

42. Victor, E., & Kellough, R. D. (2000). S*cience for the elementary and middle school* (9th ed.). Upper Saddle River, NJ: Prentice Hall.

Examines content and methods for teaching science in the elementary school. Includes hands-on approaches, resource materials, and ideas drawn from student experience. Useful for review of competencies 21–27.

43. Victor, E., Kellough, R. D., & Tai, R. H. (2008). *Science K–8: An integrated approach* (11th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Based on integrated learning by inquiry. Content outlines cover the big ideas of life, Earth, and physical science. Content correlates with National Science Education Standards. Discusses the relationships between curriculum standards, assessment, and high-stakes achievement testing. Includes science-oriented Web sites. Useful for review of competencies 21–27.

44. Wenham, M. (2003). *Understanding art: A guide for teachers.* London: Paul Chapman Publishing.

Deals with the visual elements of art, their properties, how they are related, and how children's knowledge of each can be developed through simple but creative activities. Each element is placed in context, with extensive cross-referencing. Shows how these elements can be observed in the children's environment and provides examples of how they have been used in works of art and craft. Useful for review of competencies 12–16.

7 Additional Information

Please visit the following Web site to review FTCE registration, to obtain an FTCE/FELE registration bulletin, and to find additional FTCE information, including upcoming test dates, test locations, and passing scores.

http://www.fldoe.org/asp/ftce